Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

A Single Arm Pre-Post Evaluation of the Feasibility and Acceptability of a Digital Single-Session Intervention for Adolescent Body Image in the UK: Project Body Neutrality UK

Abigail A Targett

Abigail.targett21@gmail.com

University of Bath

Arielle C Smith

Northwestern University

Grace Perry

University of Bath

Isaac L Ahuvia

Northwestern University

Jessica L Schleider

Northwestern University

Maria E Loades

University of Bath

Research Article

Keywords: eating disorders, body dissatisfaction, depression, adolescents, emerging adults, body neutrality, single session intervention, digital intervention

Posted Date: November 25th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11666200/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: Competing interest reported. JLS serves on the Scientific Advisory Board for Walden Wise and the Clinical Advisory Board for Koko (unpaid) and receives book royalties from New Harbinger; Oxford University Press; and Little, Brown Book Group. She is cofounder and chief scientific

advisor for Navi. No Navi products were used or referenced in the present manuscript. The other authors declare no competing interests.

A Single Arm Pre-Post Evaluation of the Feasibility and Acceptability of a Digital Single-Session Intervention for Adolescent Body Image in the UK: Project Body Neutrality UK.

Abigail A .Targett[1*], Arielle C. Smith[2], Grace Perry[1], Isaac L. Ahuvia[2], Jessica L. Schleider[2], Maria E. Loades[1]

[1]*University of Bath, Department of Psychology, Bath, England*

[2] *Northwestern Feinberg School of Medicine, Department of Medical Social Sciences, Chicago, IL, USA*

*Corresponding author.

Abigail A Targett, Department of Psychology, University of Bath, Bath, England.

Email: Abigail.targett21@gmail.com

Abstract

Background: Adolescents are vulnerable to developing eating disorders (EDs), with body dissatisfaction and depression recognised as transdiagnostic risk factors. Many adolescents do not access traditional clinic-based treatment, increasing the need for accessible early intervention. Project Body Neutrality (PBN) is a digital single session intervention (SSI) designed to promote a body-neutral mindset by increasing functionality appreciation. The primary objective was to evaluate the feasibility, acceptability and associated proximal change outcomes.

Methods: This single-arm trial piloted PBN for UK adolescents aged 13-21 years using a pre-post within-subjects design. Usage data and mixed-method programme feedback were analysed to address the objectives.

Results: Of the 468 adolescents who accessed PBN-UK, 96.2% reported elevated body image concerns. Four hundred adolescents completed PBN-UK and all pre-post questionnaires. The sample was predominantly white and mainly identified as girls or women, with some gender-diverse and LGBTQ+ representation. Around 22% reported a disability, typically neurodivergence or a learning difference. Completers reported high acceptability, supported by qualitative feedback and offered suggestions for improvement. Medium pre-post improvements in body dissatisfaction, functionality appreciation, hopelessness, perceived agency and perceived control were observed.

Conclusions: PBN was feasible and acceptable to adolescents and emerging adults, although more consideration is needed of age appropriateness. Future research should examine effectiveness, including long-term effects.

Trial Registration: https://osf.io/5cqdm/files/hru27

Keywords: eating disorders, body dissatisfaction, depression, adolescents, emerging adults, body neutrality, single session intervention, digital intervention.

Plain English Summary

Eating disorders (EDs) are serious mental health conditions, usually beginning in adolescence and sometimes continuing into adulthood. Many young people experience body dissatisfaction and depression, which can make them more vulnerable to developing an ED. Even when support is available, some may struggle to access traditional services, disengage or drop out. Project Body Neutrality (PBN) is a digital single-session intervention designed to help young people feel better about their bodies by developing a body-neutral mindset, recognising that how we think and feel about our bodies changes all the time, and we can focus on what our bodies do, rather than how they look. Studies in the United States have found PBN

can help young people aged 13-17 with body image and mood concerns. This study looked at how 13-21 year olds in the United Kingdom (UK) experienced PBN. Four hundred and sixty-eight young people accessed PBN, and 400 completed the intervention and questionnaires. Young people reported enjoying PBN, agreeing with the message and suggested areas for development. They showed immediate improvements in body dissatisfaction, functionality appreciation, hopelessness, perceived agency and perceived control. Project Body Neutrality could help expand early-intervention opportunities for those experiencing body image concerns in the UK.

Background

Body image is a multi-dimensional construct encompassing an individual's thoughts, perceptions, feelings and behaviours related to their body and appearance (1). Negative evaluations of one's body are typically referred to as body dissatisfaction. Body dissatisfaction is a central component of negative body image and a well-known risk factor for the development and maintenance of eating disorders (EDs, 2, 3). EDs are associated with significant psychological and physical impairment. They are known to co-occur with other mental health conditions such as depression and have high mortality rates (4-6).

Adolescents and emerging adults are considered to be at particular risk of developing EDs (7). Adolescence marks the transitional period between childhood and adulthood and is a time of rapid physical, cognitive and psychosocial changes. These developmental changes are considered to continue into emerging adulthood, alongside increasing independence, identity development and a transition into work or university (8-10). During this life stage, adolescents and emerging adults are subject to increasing pressures from peers, social media and society to fit in, which

is often linked with higher body dissatisfaction and increased risk of EDs (11-13). The Tripartite Influence Model (14, 15) posits that body dissatisfaction can occur when individuals internalise and compare themselves to appearance-related ideals communicated to them by peers, family and the media. Adolescence and emerging adulthood are therefore times of heightened vulnerability, and the prevention and early intervention of body image difficulties are crucial (7).

Despite the known vulnerability of this life stage, adolescents and emerging adults frequently encounter barriers to accessing early support and many do not seek treatment (7, 16). Common barriers include a desire to be self-reliant, self- and perceived public stigma, denial or lack of problem awareness, fears around confidentiality, long waiting times, availability of services and the expectation to commit to multiple sessions (17-20). Boys, and those from minoritised groups such as low-income and gender diverse youth, are likely to face additional individual and systemic barriers (21-23). Thus, accessible interventions with minimal barriers are needed.

Single session interventions (SSI) are structured, evidence-based programmes delivered in a single encounter through a provider, clinic or program (24). They can be delivered face-to-face by trained providers in settings such as clinics or schools or accessed anonymously online as self-help programmes. SSIs utilise principles and techniques from empirically supported treatments and have been shown to improve mental health outcomes across a variety of age-groups and populations (25). They are designed to complement existing care pathways, either as a one-off source of support, an addition to ongoing treatment or as a resource whilst waiting for help and can be revisited multiple times (24, 26). SSIs have shown better completion rates than multisession programmes (27), meaning individuals are

more likely to recieve the full theraputic dose, increasing potential benefits. SSIs can also be a bridge to further help, and completing an SSI whilst awaiting therapy may further improve the likelihood of accessing ongoing ED treatment and retention in future treatment (28, 29).

Research on SSIs designed to mitigate body dissatisfaction, a key risk factor for EDs, is emerging (25). Project Body Neutrality (PBN) is an online, self-help SSI developed in the United States (US) for adolescents aged 13-17 years who are experiencing body dissatisfaction (30). The programme aims to reduce body dissatisfaction and improve mood by increasing functionality appreciation, reducing hopelessness and increasing perceived agency. Body appreciation is a key protective factor for both male and female adolescents against the development of EDs (31). Functionality appreciation in particular, encourages individuals to focus on and value what their body does or is capable of doing, rather than how it looks (32). A focus on functionality is central to body neutrality, which emphasises a shift away from appearance and towards a more flexible, non-judgemental stance that involves appreciating and respecting the bodies capabilities (33). Thus, body neutrality offers an accessible alternative to body positivity that many adolescents find unrealistic and may not be inclusive of all bodies (33, 34).

PBN has been evaluated in two studies with US youth: a small (n = 75) single-group feasibility study with adolescents aged 13-17 (30) and a larger (n = 218) randomized controlled trial (RCT) with LGBTQ+ adolescents aged 13-17 (35). These studies produced strong evidence for the intervention’s acceptability, and initial support for reducing ED psychopathology amongst adolescents with sub-clinical ED symptoms. In both trials, adolescents rated the intervention as highly acceptable, and users reported significant pre-post improvements across all proximal outcomes

(functionality appreciation, body dissatisfaction, hopelessness, perceived agency). By 3-month follow-up (in the RCT), these gains were largely maintained, but differences between groups became non-significant as control participants reported similar improvements. However, one notable exception emerged: adolescents reporting subthreshold ED symptoms at baseline experienced significant reductions in ED psychopathology when randomised to PBN but not when randomised to the control, a significant difference in the treatment-on-the-treated analysis. The authors concluded that paper by calling for future research on this intervention, noting that "continuing to push the boundaries of traditional treatment modalities and incorporating concepts that resonate with end users - such as body neutrality - offers a promising path forward in enhancing engagement and outcomes in ED care." The present study seeks to do exactly that: continue to push the boundaries of ED care by testing whether PBN is acceptable and feasible to implement in the UK - and with both adolescents and emerging adults.

Methods

Aims

This study aimed to pilot PBN for adolescents and emerging adults (hereby referred to as young people) aged 13-21 years in the UK, evaluating the intervention's feasibility, acceptability and proximal change outcomes. This study aimed to address the following research questions:

1. How do young people find out about the PBN-UK SSI?
2. What proportion of young people completed each stage of the study (the information sheet, consent procedure, SSI and post-SSI measures)?
3. What is the experience of young people who complete PBN-UK?

4. Do young people who complete PBN-UK show proximal improvements in body dissatisfaction, functionality appreciation, hopelessness, hope, and perceived control?

As per the feasibility objectives outlined in the Medical Research Council (MRC) guidance for developing and evaluating complex interventions (36) and guidelines for designing and evaluating feasibility pilot studies (37), we aimed to examine rates of recruitment, retention, intervention delivery and acceptability to inform intervention implementation, refinement and future trials. Although the analysis was primarily exploratory, we hypothesised that young people would show improvements across all the proximal outcome measures (pre- to post-intervention).

Trial Design

We used a within-subjects single arm pre-post design, reported in line with the CONSORT extension for pilot or feasibility trials (38). The CONSORT checklist is provided in Supplementary Material S1. Items not applicable to a non-randomised design were rated as not applicable.

Participants and Recruitment

Participants were eligible to take part if they were aged 13-21 years old, a UK resident, able to read or understand English sufficiently enough to complete the SSI and had to access the internet. We opted to include older individuals than the US pilot study (30) and RCT (35) to expand provision during the transitional life stage of age 18-21, with the intention of gathering feedback to inform future adaptations for age appropriateness if and where indicated. Those not meeting these eligibility criteria and presumed bots were excluded. Participation was open to young people regardless of body image concerns to allow access to a potentially beneficial intervention unlikely to cause harm.

All participants completed informed consent procedures. Participants under the age of 16 could opt to obtain parental consent or prove that they had the capacity to provide consent for themselves through demonstrating ‘Gillick competence’ (GC; [39]). To demonstrate GC, participants were asked four multiple-choice questions (MCQs). These assessed their understanding of what the study entailed, why it was being conducted, what the potential risks of taking part were, and what the potential benefits were (40). Participants had two opportunities to correctly answer all MCQs. If they did not succeed on either of these two attempts, they could opt to seek parental consent.

Participants were recruited through physical and digital advertisements shared via schools, youth early help providers (e.g., Kooth), ED charities (e.g., SWEDA), on university mailing lists, at a university open day, across social media platforms (e.g., Instagram, Bluesky), and on the Unlock Wellbeing website. The study was also listed on the University of Bath’s Research Participation Scheme (RPS) where undergraduate psychology students could take part in the study for research credits. Recruitment ran between May 2025 and March 2026.

In line with previous SSI feasibility studies (24, 41), the intended minimum target was 100 participants, of whom at least 40 completed the full SSI and pre-post measures.

Measures

Demographic and Clinical Data

Demographic data was collected from consenting participants pre-intervention including age in years, sex assigned at birth, gender identity, sexual orientation, ethnicity and disability status. All demographic questions and response options were

based on the 2021 UK census. Specifically, for the question related to ethnicity, the response options from the 6a version were utilised.

A low-burden single item was created to identify elevated body image concerns to characterise the sample for analysis. Participants were asked to rate the extent to which they agree with the following statement: 'I experience body image concerns, for example, negative thoughts about my body that make me feel bad about myself' using a 10-point scale from 1 (not at all) to 10 (strongly agree). This was scored as a binary body image variable, with ≥3 indicating elevated body image concerns.

Feasibility

Participant engagement with the SSI was assessed using usage patterns. Free-text box responses were monitored by the first author to identify any potential harms or unintended effects of taking part.

Acceptability

The following measure was completed immediately post-SSI:

- **Program Feedback Scale (PFS; [42]).** The PFS is a 9-item questionnaire gathering both quantitative and qualitative feedback about the participant experience of the SSI. Seven of these items were rated on a 5-point Likert scale from 1 (really disagree) to 5 (totally agree) and total scores ranged from 5-35. Higher scores indicated greater endorsement. A mean score of ≥3 indicated the acceptability of the SSI, for items both individually and together (24). The PFS demonstrated good internal consistency (α=0.82). The remaining two items are free-text response items, asking participants to share what they liked about the SSI and what they would change. A further free-text box was provided asking for any other feedback.

Proximal Change Outcomes

The following measures were collected both before and immediately after the SSI:

Body Image States Scale (BISS; [43]). The BISS is a 6-item questionnaire examining an individual's evaluation of their physical appearance in the present moment. Participants responded to items on a 9-point Likert scale from 1 (extremely dissatisfied) to 9 (extremely satisfied), three of the six items were reverse-scored. Higher scores indicated a more positive body image state. Although the BISS has not been validated in an adolescent population, it has shown acceptable-good internal consistency in both men and women aged 17-54 (43) and good internal consistency in the current sample, pre- (α=0.83) and post-SSI (α=0.85).

Functionality Appreciation Scale (FAS; [44]). The FAS is a 7-item questionnaire assessing an individual's appreciation for what their body does for them. Participants responded on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), scores ranged from 7-35. Higher scores indicated higher functionality appreciation. Despite the FAS being developed in an adult population, it has demonstrated good internal consistency in both adolescent trials of PBN in the US (30, 35). The FAS demonstrated good and excellent internal consistency for the current sample at pre- (α=0.89) and post-SSI (α=0.93) respectively.

Beck Hopelessness Scale – 4 (BHS-4; [45]). The BHS is a 4-item questionnaire measuring hopelessness and is a condensed version of the original 20-item BHS (46, 47). Items are measured on a 4-point Likert scale from 0 (absolutely disagree) to 3 (absolutely agree). Total scores ranged from 0-12, with higher scores indicating greater hopelessness. The BHS demonstrated good internal

consistency in both US PBN trials (30, 35) and in the current trial pre- (α=0.88) and post-SSI (α=0.89).

Pathways subscale of State Hope Scale (SHS; [48]). The SHS is a 6-item questionnaire measuring how hopeful an individual is feeling in that moment. The SHS contains two subscales; only the 3 item pathways subscale was used, measuring an individual's perceived ability to generate ways or 'pathways' to achieve their goals (perceived agency). Items were rated on an 8-point Likert scale from 1 (definitely true) to 8 (definitely false), the total subscale score ranged from 3-24. Higher scores indicated higher state hope and stronger perceived pathways towards achieving goals. The SHS has shown acceptable to good internal consistency in adolescents in the US PBN trial respectively (35) and pre- (α=0.82) and post-SSI (α=0.90) in the current trial.

Perceived Control (24). Perceived control was measured using a single item measure developed for use in SSI research. Participants were asked to rate the following statement: "right now, I feel things are out of my control", from 0 (not at all) to 10 (a lot). Lower scores indicated higher perceived control. For clarity, this variable was reverse coded with higher values representing higher perceived control.

Intervention

PBN is a digital, self-administered SSI. It was designed in the US to improve body image and mood in adolescents and takes around 25 minutes to complete (30, 35). PBN incorporates best practice components in SSI design, including saying-is-believing activities and testimonials (49). The programme provides psychoeducation on body neutrality as an alternative to body positivity and explains the relationship between body image and mood. Fictional vignettes and self-reflection exercises are used to illustrate why body positivity may feel unattainable and how body neutrality

can be adopted through focusing on what our body does rather than how it looks. Activities vary from giving advice to vignettes using principles from body neutrality, selecting activities from a predetermined list of what their body supports them to do, and challenging a negative body-related thought by replacing it with a more neutral alternative. Participants can also choose to share their advice anonymously on social media to help other young people. The SSI ends with a personalised 'Body Neutrality Action Plan' generated from participant responses.

Young adult members (undergraduate students in the UK) of the spotLight on Adolescent Mood Problems [LAMP]) research group were invited to complete a draft version of the US PBN (50) to share general feedback and identify any issues or suggest revisions. Three volunteered, and one gave feedback. The following changes were made: spacing between text was widened as it appeared bunched in some sections; errors in Qualtrics branching and display logic was corrected and; a reminder to write down their body neutrality action plan alongside taking a screenshot was added. The language used in the intervention was also adjusted for a UK context, for example 'normalized' to 'normalised' and 'realize' to 'realise'. The term 'teens' was also changed to 'young people' following previous feedback from the LAMP Young Person Advisory Group on their preferred terms. The resulting version of PBN-UK used in this pilot study can be found on Open Science Framework (OSF, [51]).

Procedure

Interested potential participants accessed the study on Qualtrics by following the link or QR code displayed on study advertisements. They were then presented with information about the study and a series of screening questions to assess eligibility. This was followed by the consent procedures and a commitment question

("do you commit to completing the whole activity?"). Eligible and committed participants were directed to the pre-SSI measures before beginning PBN-UK. Following completion of the SSI, the post-SSI measures were presented, followed by the debrief form and option to enter the prize draw to win one of two £25 Amazon vouchers. Participants completing the study through the RPS system were able to gain research credits for participation or enter the prize draw. To maintain anonymity, personal information provided for allocation of the prize draw and RPS credit were collected using a separate Qualtrics survey. Automated bots and fraudulent responders were identified using Qualtrics automatic bot detection (a RECAPTCHA score of <0.5) and an incorrect answer to an attention check question ("which of the following is a vegetable?").

Data Analysis

Data was analysed in accordance with the pre-registered data analysis plan (52) using IBM SPSS Software version 31.0.00 (117). Descriptive statistics were used to analyse demographic, feasibility and acceptability data. To assess feasibility, the usage patterns measured were how adolescents found out about the SSI, the proportion of adolescents who viewed the information sheet (N and %), the proportion of adolescents who provided consent to take part in the SSI (N, %), the proportion of adolescents who completed the SSI following consent (N, %), the proportion of adolescents who completed the post-SSI measures following consent (N, %), and time spent engaging with the SSI (minutes and seconds). In a deviation from the pre-registered analysis plan, paired sample t-tests with simple method bootstrapping for 10,000 resamples and bias-corrected and accelerated (BCa) 95% confidence intervals were used in the analysis to provide more robust estimates. Cohen's *d(z)* effect sizes were used with the boundaries small= 0.20, medium= 0.50,

large = 0.80 (53). A Bonferroni correction was applied to control the family-wise error rate at α = .05 across the five comparisons, leaving an adjusted significance level of α=.01. In line with the US pilot study (30), acceptability and proximal outcomes were analysed only for participants reporting elevated body image concerns (score of ≥3 on the binary body image variable), as this population represents the intended end-users of the intervention.

Qualitative acceptability data from the PFS free-text responses were analysed in NVivo by the first author (AT) using inductive content analysis (ICA, [54]). A critical realist and contextualist position was taken (55), viewing young people's responses of their experience as shaped by their own contexts, whilst also acknowledging the researcher's active role in interpreting and conceptualising these accounts into categories. Responses from all three questions were coded together. After familiarisation with the data, initial codes were developed from the data before being grouped into broader categories which were subsequently refined. To support reflexivity, a co-author (GP) independently familiarised themselves with the qualitative data prior to meeting with AT to review, discuss and finalise coding categories.

Ethical Approval and Pre-registration

This study was approved by the University of Bath Social Sciences Research Ethics Committee (reference number 5950-11850) and pre-registered on OSF (56).

Results

Participant Flow and Feasibility

Participant flow through PBN-UK is illustrated in Figure 1. Of the 644 participants who accessed the Qualtrics platform, 534 were eligible to take part. In

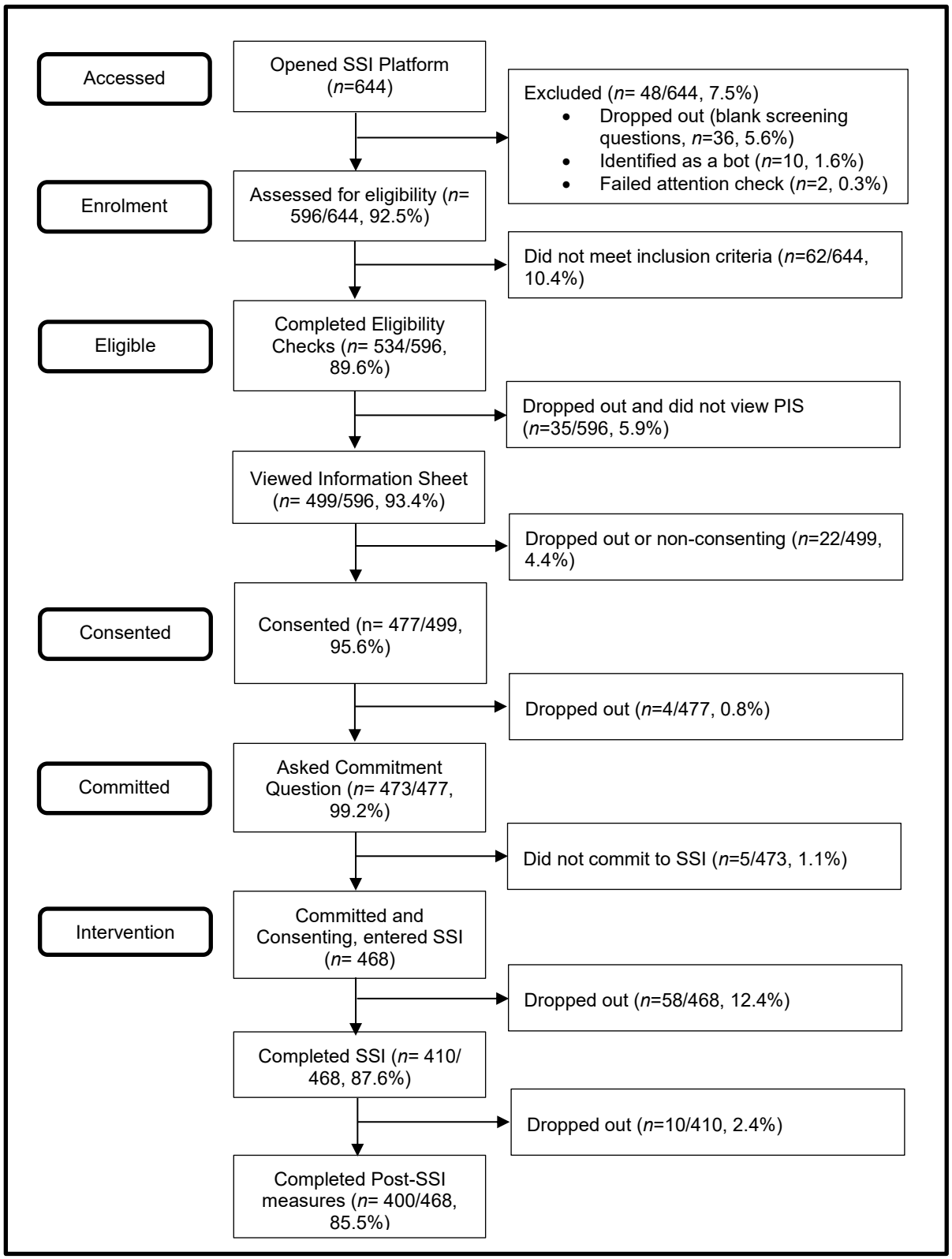
total, 468 eligible, consenting and committed participants entered PBN-UK. No harms or unintended effects were observed.

Duration and Dropout

Participation in the study, including the SSI and completion of pre- and post-SSI measures, took a median duration of 21 minutes and 21 seconds (*IQR* = 15 minutes and 20 seconds-29 minutes and 36 seconds). Of the eligible participants who consented and committed to taking part in PBN-UK (*n*=468), 410 (87.6%) completed the SSI and 400 (85.5%) completed the post-SSI measures. The highest discontinuation was during the intervention (*n*=58/468, 12.4%).

Figure 1.

g Flow Diagram for All Participants



Note. SSI = single session intervention, PIS = participant information sheet.

How do adolescents find out about the PBN SSI?

Most participants found out about PBN-UK through the University of Bath's RPS (*n*=342, 73.1%), followed by Kooth (*n*=71, 15.2%). The other recruitment avenues are presented in Table 1.

Table 1.

Recruitment Avenues

Recruitment Avenue	Number of Participants	% of Participants
RPS	342	73.1
Kooth	71	15.2
Other, free text box option	13	2.8
University of Bath open day for prospective students	13	2.8
Email	12	2.6
Instagram	12	2.6
School	8	1.7
Bluesky	1	0.2
BEAT	1	0.2

Note. Multiple responses were permitted for this question. Other avenues include word of mouth and posters at the University of Bath. RPS = research participation scheme.

Participant Characteristics

Participant characteristics are reported in Table 2 and presented as the full sample (*n*=468) and those with elevated body image concerns (*n*=450/468, 96.2%). The mean age of the full sample was 18.33 (*SD*= 1.59) and the mean age of the

elevated body image concern group was 18.31 (*SD*= 1.61). The age range for both samples was 13-21 years old.

[Insert Table 2 – Participant Characteristics]

What is the experience of adolescents who complete PBN?

Acceptability

A total of 398 young people with elevated body image concerns completed the PFS. Descriptive statistics are presented in Table 3 and the distribution of these scores in Figure 2. Overall and individual domain scores indicate that PBN-UK was highly acceptable.

Table 3.

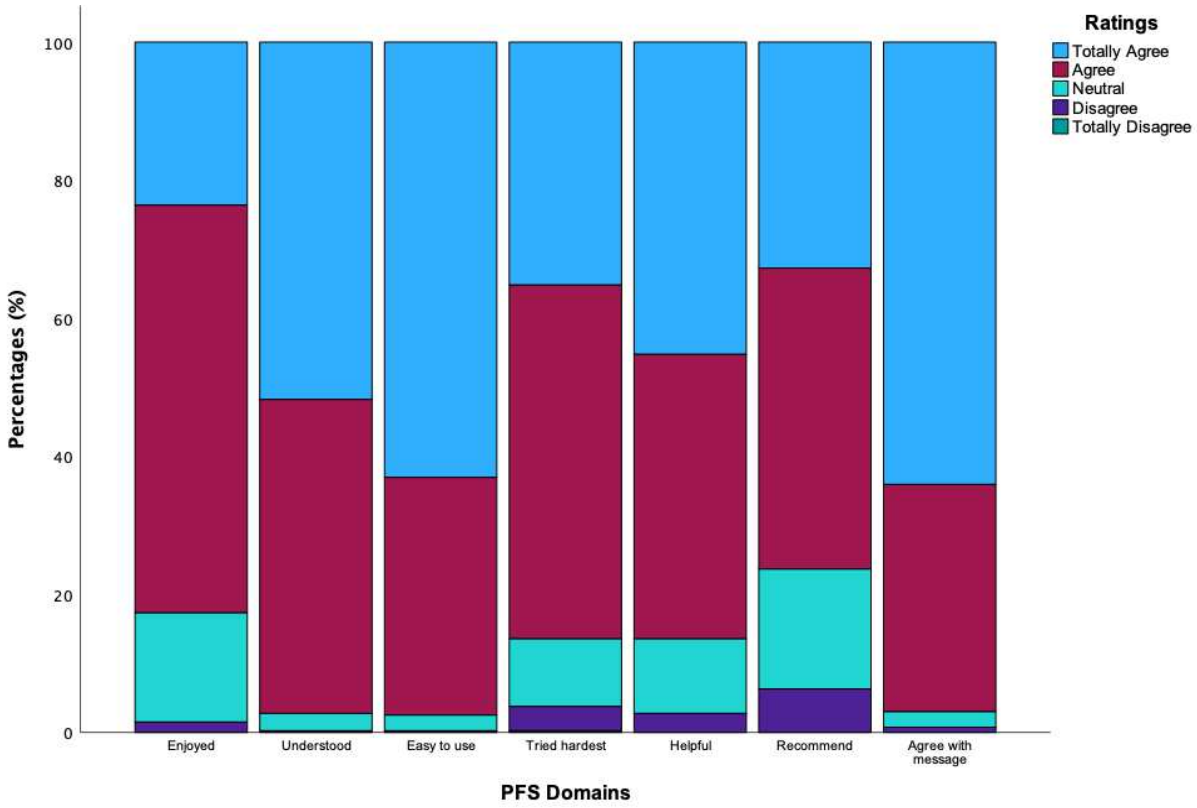
Program Feedback Scale Descriptive Statistics

Domain	Mean (*SD*)
Enjoyed the programme	4.05 (0.67)
Understood the programme	4.49 (0.56)
Easy to use	4.60 (0.55)
Tried my hardest	4.18 (0.76)
Helpful to others	4.29 (0.77)
Recommend to friend	4.03 (0.87)
Agree with message	4.60 (0.58)
Overall	4.32 (0.48)

Note. SD = standard deviation.

Figure 2.

Program Feedback Scale Score Distribution



Qualitative Feedback

Three hundred and seventy-three participants (93.71%, 373/398) responded to at least one PFS free-text response item. All 373 responded to what they liked about the intervention, 327 (87.67%) responded to what they would change about the intervention and 254 (68.09%) responded with any other thoughts. The analysis generated six main categories: diversity, inclusion and representation; interactivity and personalisation of the intervention; intervention features, intervention message and impact; usability and accessibility; and nothing to add or change. Content maps are displayed in Supplementary Material S2.

Intervention Features. This category encompasses participant views on intervention components, such as the tone, stories and examples provided as well as

the images and design elements. The most liked part of the intervention was the images and design, which many described as “visually appealing” and helpful for engagement. One participant noted “the images made it easier to understand and more engaging”. Participants also enjoyed reading the range of stories included, with one participant appreciating “getting to read the different perspectives / stories on how body image affects individuals”. A smaller group hoped for longer, more detailed stories, suggesting they could be “longer” or “expanded on slightly”. Although some participants criticised the tone, many valued its “positivity” and “uplifting comments”.

Intervention Message and Impact. This category captures participants’ reflections on the intervention’s overall message, age appropriateness, perceived psychological impact and views on sharing the intervention and promoting the study more widely. Thirty-eight participants agreed with the intervention’s core message and 93 reported a positive psychological impact following PBN-UK. This was captured in the quote: “it genuinely has helped me reframe my view to body neutrality which feels more sustainable than body positivity”. However, some participants were critical or disagreed with the intervention message noting that they “already had this knowledge before” or that “it doesn’t actually target problems at their core”. Concerns around age appropriateness were reported by 44 participants who reported that the intervention felt too young for them. Some participants described it as “childlike” or stated, “I felt too old for this”. Some participants suggested producing “different versions tailored to different age brackets”. Many participants suggested PBN-UK “should be widely available”, including within schools, stating “I hope schools can use this”.

Diversity, Inclusion and Representation. This category reflects how well PBN-UK was felt to represent diverse identities and experiences. Most participants

described PBN-UK as “inclusive” and “liked the diverse representation of different people and their experiences”. Several participants found characters or stories they could relate to. One participant stated, “it provided relatable and realistic examples I could identify with”. However, others could not, reporting limited relatability, stating “I didn't see someone that looked like me” and requested “more inclusivity towards religious people”, “more about race”, and “more about neurodivergence”. Participants also suggested including content on “taller women”, “more about eating disorders” and those who are “underweight”, “pressure to go to the gym”, “pressures within sporting environments” and “cultural differences and impacts on body image”.

Interactivity and Personalisation. This category highlights participant perspectives on the intervention’s interactive features and personalisation of its content. Overall, positive responses most commonly related to the intervention’s ability to personalise content, with many appreciating the individualised action plan produced at the end using their responses. Although some participants liked the intervention’s interactivity, others recommended increasing interactivity by incorporating audio and/or video (e.g., to listen and/or see character stories).

Usability and Accessibility. The usability and accessibility category brings together participant feedback on how accessible and easy to use the intervention felt, how easy to read and understand the information was and comments on the overall presentation. Positive feedback most commonly related to the clarity of the information and how easy this information was to understand. Some participants criticised the length and the amount of information presented, suggesting that the intervention was too long, with too much text, whilst a smaller number felt the intervention was too short. Two participants commented that the intervention was accessible to them, considering their attention difficulties and learning needs. An

additional two participants specifically suggested a colour filter option for the web page to improve visual accessibility.

Nothing to Add or Change. The category captures feedback where participants shared whether they had no further feedback or changes they would make to the intervention. Many participants reported they had no desired changes for the intervention, some explicitly stating they would change ‘nothing’. Others provided no additional feedback, and many indicated the item was ‘not applicable’.

Changes in Proximal Outcomes

Paired samples *t*-tests with bootstrapping showed statistically significant increases with medium effect sizes in state body satisfaction (*Mdiff* = 3.31, *SD* = 4.76, *t*(387) = 13.73, *p* < .001, 95% BCa CI [2.85, 3.79], *d(z)* = 0.70, 95% CI [0.59, 0.81]), functionality appreciation (*Mdiff* = 2.42, *SD* = 3.51, *t*(387) = 13.58, *p*<.001, 95% BCa CI [2.06, 2.77], *d(z)* = 0.69, 95% CI [0.58, 0.80]), perceived agency (*Mdiff* = 1.46, *SD* = 2.52, *t*(387) = 11.44, *p* < .001, 95% BCa CI [1.21, 1.71], *d(z)* = 0.58, 95% CI [0.47, 0.69]) and perceived control (*Mdiff* = 0.85, *SD* = 1.28, *t*(387) = 13.01, *p* < .001, 95% BCa CI [0.72, 0.98], *d(z)* = 0.66, 95% CI [0.55, 0.77]). Statistically significant decreases in hopelessness were observed (*M*diff = -0.79, *SD* =1.52, *t*(387) = -10.24, *p* < .001, 95% BCa CI [-0.94, -0.65], *d(z)* = -0.52, 95% CI [-0.63, -0.41]). See Table 3 for descriptive statistics.

Table 3.

Descriptive Statistics

Measure	*N*	Pre SSI		Post SSI	
		M	***SD***	***M***	***SD***
State body satisfaction	390	27.78	8.55	31.10	8.18
Functionality appreciation	388	27.66	4.88	30.07	4.78
Perceived agency	394	16.71	3.90	18.18	3.67
Perceived control	388	4.72	2.27	5.56	2.29
Hopelessness	395	3.57	2.85	2.78	2.61

Discussion

This single arm pre-post pilot study indicates that a lightly adapted PBN is feasible, acceptable and shows preliminary utility in a UK context, including for older adolescents and emerging adults. The most popular recruitment avenue was through the university's RPS, followed by a third party early help provider, Kooth. Almost all participants reported elevated body image concerns (96.2%). Most participants were assigned female at birth, identified as girls or women and were heterosexual. Participants also included gender-diverse and LGBTQ+ adolescents, predominantly identifying as white. Around 22% of participants reported having a disability, most commonly neurodivergence or learning difference. Overall, most (87.6%) consenting and committed participants completed the SSI and rated PBN as highly acceptable. Improvements in body dissatisfaction, functionality appreciation, hopelessness, perceived agency and perceived control (all medium effect sizes) were also observed. Consistent with the US research (30, 35), this indicates the potential utility of PBN for UK young people experiencing body image concerns.

Most participants found out about the study through a university RPS, incentivised by the offer of course credits. Participants recruited through other

avenues were offered the chance to enter a prize draw. Incentives can support engagement with SSIs and related research activities in and prior research has shown that adolescents are more likely to complete digital interventions when incentivised (57). Furthermore, completion rates were high (85.5%), higher than those in the US PBN pilot (56.4%, 30) but similar to the US RCT (96.1%, 35). Offering participants incentives to take part could be one explanation for this, as the US pilot offered no incentives whereas the current study and the RCT did. However, completion rates for PBN-UK were also higher than UK pilot studies for Project Care (37.4%; 58), a self-compassion-focused digital SSI and Project ABC (44.6%; 41), a behavioural activation digital SSI, despite both these studies also including incentives.

Although PBN-UK was available to all UK young people aged 13-21 who met the inclusion criteria irrespective of body image concerns, the vast majority of participants did have elevated body image concerns. Digital interventions such as PBN may be especially appealing to young people who are already experiencing these difficulties. It may also reflect the high prevalence of body image concerns and related vulnerability to EDs in the general population. Thus, PBN could offer a scalable way to reach a large group of at-risk adolescents, as shown in Smith et al. (35). The current sample were predominantly assigned female at birth, white, heterosexual girls or women. This may reflect the recruitment strategy, which relied mostly on university-related sources, with students on UK psychology courses tending to belong to these groups (59). Alternatively, the sample characteristics could reflect broader inequalities in who is able and willing to access mental health support. Men or boys, and individuals from minoritised backgrounds such as gender diverse, LGBTQ+ and low-income youth often face additional barriers to accessing

services (20, 60), which could have affected study uptake in these groups meaning their experiences may not be adequately represented in this study. The digital format and self-consent processes of SSIs are intended to improve accessibility, with adolescents frequently seeking mental health support online, due to privacy, accessibility, stigma and self-reliance (19, 61 62). Qualitative feedback suggested that PBN was experienced as inclusive and represented diverse identities, although participants also offered suggestions for further widening representation. Similarly to Smith et al. (35), the lack of age appropriateness was highlighted in qualitative feedback and UK adolescents recommended tailored versions for different age groups.

The present study explored the preliminary efficacy of PBN, finding statistically significant pre-post improvements across all outcomes with medium effect sizes. This suggests that PBN SSI has the potential to produce meaningful improvements for young people with body image concerns in the UK. These effects are broadly comparable to the US PBN studies who found medium effects for body dissatisfaction and hopelessness, and a large effect for functionality appreciation (30, 35). In the wider digital SSI literature, medium to large effects have been observed for digital SSIs targeting youth internalising distress (49), and medium effects in the UK programme evaluations of Project ABC (41) and Project Care (58).

Strengths, Limitations and Future Directions

A key strength of this pilot was its large sample size, which exceeded the preregistered target. This indicates that the intervention was appealing and of interest to the target population. The study also used a variety of validated outcome measures appropriate for SSI research, with most measuring state level change. The exception was the FAS, a trait level measure. Future research should consider using

the newly adapted state version (S-FAS, [63]) and validating it within an adolescent population. Lastly, the mixed method approach allowed for a more in-depth understanding of participant experiences to be drawn (55). However, free-text responses are limited in richness and do not allow for further detail to be explored. Think-aloud interviews, as advocated for in the Person Based Approach (64), could inform future intervention refinement, particularly for emerging adults.

As this was a pilot trial with no control condition, we cannot conclude that specific intervention components of PBN-UK (as opposed to more general factors like demand characteristics) caused pre-post improvements. The lack of follow-up assessment also precluded conclusions about maintenance of gains over time. In future, a randomised control design with longer term follow ups could enable more robust conclusions on the specificity and sustainability of improvements. We did not set a target number of participants based on power calculations; instead, as a feasibility study, we set a minimum number to exceed. We exceeded this number and continued recruitment to ensure a more diverse and representative sample beyond university students in an attempt to capture younger adolescents. Despite this, our sample was mainly older adolescents and emerging adults. To improve generalisability, future recruitment should aim to reach younger adolescents, particularly given that several participants felt PBN was tailored towards a younger audience. Different versions of PBN could also be coproduced with different age groups to further improve acceptability.

Although progression criteria were not pre-specified, criteria generally considered in feasibility studies (65) and SSI studies (66, 67), were retrospectively considered alongside PFS data (49). Recruitment exceeded the pre-registered minimum target, with a large proportion identifying body image concerns.

Intervention completion, retention, and acceptability were high, supporting feasibility and trial progression. A fully powered RCT with longer term follow-up would build on the current study and existing US research and should evaluate PBN within a real-world UK context. A larger sample size would address a limitation identified in the US RCT, allowing for more precise estimates of effects and moderator analysis to examine which participants benefit most from the SSI in the UK. Different implementation routes, such as a waiting-list intervention, should also be explored, with attention paid to both participant uptake and the intervention effectiveness.

Clinical Implications

Findings from this study suggest that SSIs like PBN may provide a scalable early intervention opportunity for UK adolescents and emerging adults with body image concerns, as well as expanding on traditional clinic-based provision. PBN can be offered at referral, as a wait-list intervention, or between therapy sessions to support continued engagement and retention (18, 68). To reach adolescents who are less likely to seek support through traditional services, PBN should be made available through third party organisations, including those who offer early, anonymous online support (69). This is to ensure reach to young people where they are at, specifically underserved and marginalised groups. This is important, as recent research indicates that adolescents often view SSIs as a gateway or “stepping stone” to further help seeking (70, p. 6). Consideration is also needed when offering digital SSIs to adolescents from low-income households, as limited access to devices or a stable internet connection could be a potential barrier to access (20). Future research is needed to understand the effectiveness of PBN for reducing ED symptoms and/or supporting engagement in longer-term interventions.

Conclusions

This pilot study provides evidence that PBN is acceptable and feasible for UK adolescents and emerging adults experiencing body image concerns. It contributes to a limited but emerging evidence base exploring the utility of SSI's in reducing transdiagnostic ED risk factors and assessing the acceptability of body-neutrality approaches for young people within an SSI framework. At the same time, despite seeing improvements in proximal outcomes, the lack of control condition and absence of follow-up limit the robustness of conclusions. Future research using controlled designs and follow-up assessment is needed to determine the effectiveness of PBN in producing sustained and longer-term changes.

List of Abbreviations

ED: Eating Disorder

EDs: Eating Disorders

PBN: Project Body Neutrality

SSI: Single Session Intervention

LGBTQ+: Lesbian, Gay, Bisexual, Transgender, and Queer

UK: United Kingdom

US: United States

RCT: Randomised Control Trial

MRC: Medical Research Council

CONSORT: Consolidated Standards of Reporting Trials

GC: Gillick Competence

MCQs: Multiple Choice Questions

RPS: Research Participation Scheme

PFS: Program Feedback Scale

BISS: Body Image States Scale

FAS: Functionality Appreciation Scale

BHS: Beck Hopelessness Scale

SHS: State Hope Scale

LAMP: spotLight on Adolescent Mood Problems

OSF: Open Science Framework

BCa: Bias-Corrected and Accelerated

ICA: Inductive Content Analysis

IQR: Interquartile Range

SD: Standard Deviation

Mdiff: Mean Difference

CI: Confidence Interval

Prof: Professor

NIHR: National Institute for Health Research

NHS: National Health Service

Declarations

Ethics Approval and Consent to Participate

This study was approved by the University of Bath Social Sciences Research Ethics Committee (reference number 5950-11850). Informed consent was obtained from all participants prior to participating in the study. For participants under the age of 16, the GC procedure was followed and/or parental consent obtained.

Consent for Publication

Not applicable.

Availability of Data and Materials

Anonymised data will be shared on the OSF upon acceptance for publication. SPSS syntax used for analysis is available on OSF (https://osf.io/5cqdm/files/nsxj; https://osf.io/5cqdm/files/3hzs7).

Competing Interests

JLS serves on the Scientific Advisory Board for Walden Wise and the Clinical Advisory Board for Koko (unpaid) and receives book royalties from New Harbinger; Oxford University Press; and Little, Brown Book Group. She is cofounder and chief scientific advisor for Navi. No Navi products were used or referenced in the present manuscript. The other authors declare no competing interests.

Funding

Abigail Targett received no specific funding for this research project. Prof Maria Loades (Advanced Fellowship, 302929) is funded by the National Institute for Health Research (NIHR) for this research project. The views expressed in this publication are those of the author(s) and not necessarily those of the NIHR, NHS or the UK Department of Health and Social Care. Arielle C. Smith receives funding from the National Science Foundation Graduate Research Fellowship Program (fellow ID: 2024371656). Isaac Ahuvia's work is supported by an NIMH T32 grant (award number: T32MH115882). Jessica Schleider receives research funding from the National Institute of Mental Health (P50MH119029), the Valinhos Foundation, the American Foundation for Suicide Prevention, the Jacobs Foundation, Koko, AIM Youth Mental Health, CVS Health/Aetna Behavioral Health, the Montana Department of Public Health and Human Services, Sourcewell/AscendRural, and the New York State Office of Mental Health.

Authors' Contributions

Abigail A. Targett: Conceptualisation, Methodology, Investigation, Formal analysis, Data curation, Writing – original draft, Writing – review and editing, Visualisation, Project administration. **Arielle C. Smith:** Conceptualisation, Resources, Methodology, Writing – review and editing. **Grace Perry:** Software, Formal analysis, Writing – review and editing. **Isaac L. Ahuvia:** Conceptualisation, Resources, Writing – review and editing. **Jessica L. Schleider:** Conceptualisation, Resources, Writing – review and editing. **Maria E. Loades:** Conceptualisation, Project administration, Supervision, Methodology, Writing – review and editing.

Acknowledgements

The authors would like to thank all the young people who took an interest in and engaged with PBN-UK. Thanks also go to the organisations that shared the study advertisements in their buildings and on their online platforms. Also to George Davison, a graphic designer and friend, for his support in designing and formatting the study recruitment materials. A special thanks to the undergraduate student who took the time to review the project materials and provide their valuable feedback on the intervention materials, and to Georgia Tear, placement student, for collating consenting young person feedback from PBN-UK for social media posts.

References

1. Cash TF, Smolak L. Body image: a handbook of science, practice, and prevention. 2nd ed. New York: Guilford Press; 2011.
2. Glashouwer KA, van der Veer RML, Adipatria F, de Jong PJ, Vocks S. The role of body image disturbance in the onset, maintenance, and relapse of anorexia nervosa: a systematic review. Clin Psychol Rev. 2019;74:101771. doi:10.1016/j.cpr.2019.101771.
3. Stice E, Shaw HE. Role of body dissatisfaction in the onset and maintenance of eating pathology: a synthesis of research findings. J Psychosom Res. 2002;53(5):985-993. doi:10.1016/S0022-3999(02)00488-9.
4. Attia E, Walsh BT. Eating Disorders: A Review. JAMA. 2025;333(14):1242-1252. doi:10.1001/jama.2025.0132.
5. Morgan C, Carr MJ, Chew-Graham CA, O'Neill TW, Elvins R, Kapur N, et al. Adverse outcomes in patients with a diagnosis of an eating disorder: primary care cohort study with linked secondary care and mortality records. BMJ Med. 2025;4(1):e001438. doi:10.1136/bmjmed-2025-001438.
6. Smink FRE, van Hoeken D, Hoek HW. Epidemiology of Eating Disorders: Incidence, Prevalence and Mortality Rates. Curr Psychiatry Rep. 2012;14(4):406-414. doi:10.1007/s11920-012-0282-y.
7. Treasure J, Duarte TA, Schmidt U. Eating disorders. Lancet. 2020;395(10227):899-911. Doi:10.1016/S0140-6736(20)30059-3.
8. Arnett JJ. Emerging adulthood: a theory of development from the late teens through the twenties. Am Psychol. 2000;55:469-480. doi:10.1037/0003-066X.55.5.469.

9. Arnett JJ. *Emerging adulthood: the winding road from the late teens through the twenties*. Oxford: Oxford University Press; 2004.
10. Hochberg Z, Konner M. Emerging adulthood, a pre-adult life-history stage. Front Endocrinol. 2020;10:918. Doi:10.3389/fendo.2019.00918
11. Nawaz FA, Riaz MMA, Banday NUA, Singh A, Arshad Z, Derby H, et al. Social media use among adolescents with eating disorders: a double-edged sword. Front Psychiatry. 2024;15. Doi:10.3389/fpsyt.2024.1300182.
12. Stice E, Marti CN, Durant S. Risk factors for onset of eating disorders: evidence of multiple risk pathways from an 8-year prospective study. Behav Res Ther. 2011;49(10):622-627. doi:10.1016/j.brat.2011.06.009.
13. Suarez-Albor CL, Galletta M, Gómez-Bustamante EM. Factors associated with eating disorders in adolescents: a systematic review. Acta Biomed. 2022;93(3):e2022253. doi:10.23750/abm.v93i3.13140.
14. Thompson JK, Heinberg LJ, Altabe M, Tantleff-Dunn S. Exacting beauty: theory, assessment, and treatment of body image disturbance. Washington (DC): American Psychological Association; 1999. doi:10.1037/10312-000.
15. Keery H, van den Berg P, Thompson JK. An evaluation of the tripartite influence model of body image and eating disturbance. Body Image. 2004;1:237-251. doi:10.1016/j.bodyim.2004.03.001.
16. Solmi F, Hotopf M, Hatch SL, Treasure J, Micali N. Eating disorders in a multi-ethnic inner-city UK sample: prevalence, comorbidity and service use. Soc Psychiatry Psychiatr Epidemiol. 2016;51(3):369-381. doi:10.1007/s00127-015-1146-7.
17. Daugelat M, Pruccoli J, Schag K, Giel K. Barriers and facilitators affecting treatment uptake behaviours for patients with eating disorders: a systematic

review synthesising patient, caregiver and clinician perspectives. Eur Eat Disord Rev. 2023;31(6):752-768. doi:10.1002/erv.2999.

18. Mills R, Hyam L, Schmidt U. A narrative review of early intervention for eating disorders: barriers and facilitators. Adolesc Health Med Ther. 2023;14:217-235. doi:10.2147/AHMT.S415698.
19. Radez J, Reardon T, Creswell C, Lawrence PJ, Evdoka-Burton G, Waite P. Why do children and adolescents (not) seek and access professional help for their mental health problems? A systematic review of quantitative and qualitative studies. Eur Child Adolesc Psychiatry. 2021;30(2):183-211. doi:10.1007/s00787-019-01469-4.
20. Udu SK, Chukwu JO, Muhammad R, Isiyaku S. Barriers and disparities in adolescent mental health service access in the UK: a systematic review. Ment Health Prev. 2026;41:200497. doi:10.1016/j.mhp.2026.200497.
21. Bailey-Straebler S, Glasofer DR, Ojeda J, Attia E. Equitable access to evidence-based treatment for eating disorders for patients with low income: identifying barriers and exploring solutions. Cogn Behav Ther. 2024;17:e5. doi:10.1017/S1754470X24000023.
22. Hartman-Munick SM, Silverstein S, Guss CE, Lopez E, Calzo JP, Gordon AR. Eating disorder screening and treatment experiences in transgender and gender diverse young adults. Eat Behav. 2021;41:101517. doi:10.1016/j.eatbeh.2021.101517.
23. Nicula M, Pellegrini D, Grennan L, Bhatnagar N, McVey G, Couturier J. Help-seeking attitudes and behaviours among youth with eating disorders: a scoping review. J Eat Disord. 2022;10(1):21. doi:10.1186/s40337-022-00543-8.

24. Schleider JL, Dobias M, Sung J, Mullarkey MC. Future directions in single-session youth mental health interventions. J Clin Child Adolesc Psychol. 2020;49(2):264-278. doi:10.1080/15374416.2019.1683852.

25. Schleider JL, Zapata JP, Rapoport A, Wescott A, Ghosh A, Kaveladze B, et al. Single-session interventions for mental health problems and service engagement: umbrella review of systematic reviews and meta-analyses. Annu Rev Clin Psychol. 2025;21:279-303. doi:10.1146/annurev-clinpsy-081423-025033.

26. Schleider JL, Smith AC, Ahuvia I. Realizing the untapped promise of single-session interventions for eating disorders. Int J Eat Disord. 2023;56(5):853-863. doi:10.1002/eat.23920.

27. Bowers EM, Klimczak KS, Aller TB, Levin ME. The paradox of choice: user preferences and completion rates in single-session vs multi-session digital mental health interventions. Cogn Behav Ther. 2026;55(3):466-476. doi:10.1080/16506073.2025.2512971.

28. Cohen K, Dobias M, Morris R, Schleider J. Improving uptake of mental health crisis resources: randomized test of a single-session intervention embedded in social media. J Behav Cogn Ther. 2023;33(1):24-34. doi:10.1016/j.jbct.2022.12.001.

29. Keegan E, Waller G, Tchanturia K, Wade TD. The potential value of brief waitlist interventions in enhancing treatment retention and outcomes: a randomised controlled trial. Cogn Behav Ther. 2024;53(6):608-620. doi:10.1080/16506073.2024.2351867.

30. Smith AC, Ahuvia I, Ito S, Schleider JL. Project Body Neutrality: Piloting a digital single-session intervention for adolescent body image and depression. Int J Eat Disord. 2023;56(8):1554-1569. doi:10.1002/eat.23976.

31. Argyrides M, Anastasiades E, Alexiou E. Risk and Protective Factors of Disordered Eating in Adolescents Based on Gender and Body Mass Index. Int J Environ Res Public Health. 2020;17(24): 9238. doi: 10.3390/ijerph17249238.

32. Alleva JM, Tylka TL. Body functionality: A review of the literature. Body Image. 2021;36:149-71. doi. 10.1016/j.bodyim.2020.11.006

33. Pellizzer ML, Wade TD. Developing a definition of body neutrality and strategies for an intervention. Body Image. 2023;46:434-42. doi. 10.1016/j.bodyim.2023.07.006.

34. Mulgrew KE, Hinz A. What is body neutrality and how is it different to existing body image concepts? An analysis of experts and general community responses. Body Image. 2024;51:101780. doi: 10.1016/j.bodyim.2024.101780.

35. Smith AC, Ahuvia IL, Zapata JP, Cohen KA, Graham AK, Schleider JL. Randomized trial of a digital single-session intervention for body image and mood concerns among LGBTQ+ adolescents. Behaviour Research and Therapy. 2025;193:104809. doi. 10.1016/j.brat.2025.104809.

36. Skivington K, Matthews L, Simpson SA, Craig P, Baird J, Blazeby JM, et al. A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. BMJ. 2021;374:n2061. doi. 10.1136/bmj.n2061.

37. Teresi JA, Yu X, Stewart AL, Hays RD. Guidelines for Designing and Evaluating Feasibility Pilot Studies. Med Care. 2022;60(1):95-103. doi. 10.1097/mlr.0000000000001664.

38. Eldridge SM, Lancaster GA, Campbell MJ, Thabane L, Hopewell S, Coleman CL, et al. Defining Feasibility and Pilot Studies in Preparation for Randomised Controlled Trials: Development of a Conceptual Framework. PLOS ONE. 2016;11(3):e0150205. doi.10.1371/journal.pone.0150205.

39. Gillick v West Norfolk and Wisbech Area Health Authority and Department of Health and Social Security [1985] UKHL 7.

40. Loades M, Willis L, Wilson E, Perry G, Luximon M, Chiu CTC, et al. Consenting for themselves: a qualitative study exploring a Gillick Competence assessment to enable adolescents to self-consent to low-risk online research. BMJ Open. 2025;15(3):e090747. doi.10.1136/bmjopen-2024-090747.

41. Munir S, Perry G, Lambert J, Loades ME. Immediate Effects and Experiences of a Digital Single-Session Behavioural Activation Based Intervention for Adolescents: A Single Arm Pre-post Programme Evaluation of Project ABC in the UK. Clin Child Psychol Psychiatry. 2026:13591045261433857. doi. 10.1177/13591045261433857.

42. Schleider JL, Mullarkey MC, Weisz JR. Virtual Reality and Web-Based Growth Mindset Interventions for Adolescent Depression: Protocol for a Three-Arm Randomized Trial. JMIR Res Protoc. 2019;8(7):e13368. doi:10.2196/13368.

43. Cash TF, Fleming EC, Alindogan J, Steadman L, Whitehead A. Beyond body image as a trait: the development and validation of the Body Image States Scale. Eat Disord. 2002;10(2):103-13. doi: 10.1080/10640260290081678.

44. Alleva JM, Tylka TL, Kroon Van Diest AM. The Functionality Appreciation Scale (FAS): Development and psychometric evaluation in U.S. community women and men. Body Image. 2017;23:28-44. doi: 10.1016/j.bodyim.2017.07.008.

45. Aish AM, Wasserman D, Renberg ES. Does Beck's Hopelessness Scale really measure several components? Psychol Med. 2001;31(2):367-72. doi: 10.1017/s0033291701003300.

46. Beck AT, Weissman A, Lester D, Trexler L. The measurement of pessimism: The Hopelessness Scale. Journal of Consulting and Clinical Psychology. 1974;42(6):861-5. doi: 10.1037/h0037562.

47. Perczel Forintos D, Rózsa S, Pilling J, Kopp M. Proposal for a short version of the Beck Hopelessness Scale based on a national representative survey in Hungary. Community Ment Health J. 2013;49(6):822-30. doi: 10.1007/s10597-013-9619-1.

48. Snyder CR, Sympson SC, Ybasco FC, Borders TF, Babyak MA, Higgins RL. Development and validation of the State Hope Scale. Journal of personality and social psychology. 1996;70(2):321 -335. doi:10.1037/0022-3514.70.2.321.

49. Schleider JL, Dobias M, Sung J, Mumper E, Mullarkey MC. Acceptability and Utility of an Open-Access, Online Single-Session Intervention Platform for Adolescent Mental Health. JMIR Ment Health. 2020;7(6):e20513. doi: 10.2196/20513.

50. Smith AC, Ahuvia IL, Cohen K, Ito S, Schleider JL. Project Body Neutrality SSI – Updated. Open Science Framework. https://osf.io/w82bf/files/7qtuj. Accessed 8 November 2026.

51. Targett A, Loades M, Smith AC, Barry T, Schleider JL, Perry G. Adapted SSI Material For Project Body Neutrality UK. Open Science Framework. https://osf.io/5cqdm/files/kzbgv. Accessed 8 November 2026.

52. Targett A, Loades M, Smith AC, Barry T, Schleider JL, Perry G. Data Analysis Plan PBN-UK. Open Science Framework. https://osf.io/5cqdm/files/8smqv. Accessed 8 November 2026.

53. Cohen J. Statistical Power Analysis for the Behavioral Sciences. 2 ed. Hillsdale, (NJ) Lawrence Erlbaum Associates; 1988.

54. Elo S, Kyngäs H. The qualitative content analysis process. Journal of Advanced Nursing. 2008;62:107-15. doi: 10.1111/j.1365-2648.2007.04569.x.

55. Scott D. Resolving the quantitative–qualitative dilemma: a critical realist approach. International Journal of Research & Method in Education. 2007;30(1):3-17. doi: 10.1080/17437270701207694.

56. Targett A, Loades M, Smith AC, Barry T, Schleider JL, Perry G. PBN-UK_Preregistration. Open Science Framework. https://osf.io/5cqdm/files/hru27. Accessed 8 November 2026.

57. Cohen KA, Schleider JL. Adolescent dropout from brief digital mental health interventions within and beyond randomized trials. Internet Interventions. 2022;27:100496. doi: 10.1016/j.invent.2022.100496.

58. Loades ME, Perry G, Marshall N. Investigating Project Care UK, a Web-Based Self-Help Single-Session Intervention for Youth Mental Health: Program Evaluation. JMIR Ment Health. 2025;12:e72077. doi: 10.2196/72077.

59. Palmer W, Schlepper L, Hemmings N, Crellin N. The right track: participation and progression in psychology career paths. London: Nuffield Trust; 2021. Available from: https://www.nuffieldtrust.org.uk/sites/default/files/2021-07/1625671007_nuffield-trust-the-right-track-pipeline-of-psychologists-web2.pdf.

60. Mora Ringle VA, Sung JY, Roulston CA, Schleider JL. Mixed-Methods Examination of Adolescent-Reported Barriers to Accessing Mental Health Services. J Adolesc Health. 2024;74(2):268-76. doi: 10.1016/j.jadohealth.2023.08.034.

61. Pretorius C, Chambers D, Coyle D. Young People's Online Help-Seeking and Mental Health Difficulties: Systematic Narrative Review. J Med Internet Res. 2019;21(11):e13873. doi: 10.2196/13873.

62. Stepney M, Martin S, Mikulak M, Ryan S, Stewart J, Ma R, et al. Improving the experience of health services for trans and gender-diverse young people and their families: an exploratory qualitative study. Health and Social Care Delivery Research. 2025;13:04. doi: 10.3310/XCYT6530.

63. Longhurst P, Tylka TL, Alleva JM. Measuring state functionality appreciation: A psychometric evaluation of an adapted version of the functionality appreciation scale (S-FAS). Body Image. 2025;55:101996. doi: 10.1016/j.bodyim.2025.101996.

64. Yardley L, Morrison L, Bradbury K, Muller I. The Person-Based Approach to Intervention Development: Application to Digital Health-Related Behavior Change Interventions. J Med Internet Res. 2015;17(1):e30. doi:10.2196/jmir.4055.

65. Mellor K, Albury C, Dutton SJ, Eldridge S, Hopewell S. Recommendations for progression criteria during external randomised pilot trial design, conduct, analysis and reporting. Pilot Feasibility Stud. 2023;9(1):59. doi: 10.1186/s40814-023-01291-5.

66. Craddock N, Garbett KM, Haywood S, Nasution K, White P, Saraswati LA, et al. 'Dove Confident Me Indonesia: Single Session': study protocol for a

randomised controlled trial to evaluate a school-based body image intervention among Indonesian adolescents. BMC public health. 2021;21(1):2102. doi: 10.1186/s12889-021-11770-0.

67. Hatoum AH, Wong Q, Hunt Z, O'Dea B, Josifovski N, Gan D, et al. Program LIFT: protocol for a pilot feasibility factorial randomised controlled trial of digital single-session interventions to address self-harm and suicidal ideation in Australian community-based adolescents. BMJ Open. 2026;16(3):e112453. doi:10.1136/bmjopen-2025-112453.
68. Keegan E, Waller G, Tchanturia K, Wade TD. The potential value of brief waitlist interventions in enhancing treatment retention and outcomes: a randomised controlled trial. Cognitive Behaviour Therapy. 2024;53(6):608-20. doi: 10.1080/16506073.2024.2351867.
69. Pretorius C, Coyle D. Young people's use of digital tools to support their mental health during COVID-19 restrictions. Front Digit Health. 2021;3:763876. doi:10.3389/fdgth.2021.763876.
70. Higson-Sweeney N, Dallison S, Craddock E, Teague B, Payne-Cook C, Leas J, et al. Young people's attitudes towards online self-help single-session interventions: findings from a co-produced qualitative study. BMC Psychology. 2025;13(1):439. doi: 10.1186/s40359-025-02727-8.

Table 2.

Participant Characteristics

Demographic Variable		Full Sample (*N*=468)	Elevated Body Image Concerns (*N*=450)
		Number of Participants (%)	
Age (years)	13-17	76 (16.2)	75 (16.7)
	18-21	392 (83.8)	374 (83.3)
Sex at birth	Male	51 (10.9)	47 (10.4)
	Female	414 (88.7)	401 (89.1)
	Prefer not to answer	2 (0.4)	2 (0.4)
Gender identity	Man/Boy	47 (10.1)	43 (9.6)
	Woman/Girl	394 (84.4)	381 (84.7)
	Transgender	8 (1.7)	8 (1.8)
	Female to male transgender/ FTM	4 (0.9)	4 (0.9)
	Male to female transgender/ MTF	4 (0.9)	4 (0.9)
	Trans male/ Trans masculine	5 (1.1)	5 (1.1)
	Trans female/ Trans feminine	4 (0.9)	4 (0.9)
	Genderqueer	6 (1.3)	6 (1.3)
	Gender expansive	1 (0.2)	1 (0.2)
	Androgynous	3 (0.6)	3 (0.7)
	Nonbinary	13 (2.8)	13 (2.9)
	Agender	2 (0.4)	2 (0.4)
	Not sure	10 (2.1)	10 (2.2)
	Other	5 (1.1)	5 (1.1)

Sexual orientation	Heterosexual/ Straight	282 (60.5)	268 (59.6)
	Gay /Lesbian/ Homosexual	47 (10.1)	46 (10.2)
	Bisexual	81 (17.4)	80 (17.8)
	Pansexual	9 (1.9)	9 (2.0)
	Queer	11 (2.4)	11 (2.4)
	Asexual	14 (3.0)	14 (3.1)
	Unsure/ Questioning	19 (4.1)	19 (4.2)
	I do not use a label	21 (4.5)	21 (4.7)
	Prefer not to answer	12 (2.6)	12 (2.7)
	Other/ Not listed	4 (0.9)	4 (0.9)
Ethnicity	White (all White categories)	326 (70.0)	317 (70.4)
	Mixed (all Mixed categories)	37 (7.9)	37 (8.2)
	Asian (all Asian categories)	85 (18.2)	79 (17.6)
	Black (all Black categories)	14 (3.0)	13 (2.9)
	Any other ethnic group (Arab and other)	8 (1.7)	8 (1.8)
	Prefer not to answer	7 (1.5)	7 (1.6)
Disability status	Yes	99 (21.3)	98 (21.8)
	No	366 (78.7)	351 (78.0)
	Physical disability or mobility issue	1 (1.0)	1 (1.0)
	Neurodiversity or learning difference	47 (48.0)	47 (48.5)
	Mental Health Condition	21 (21.4)	20 (20.6)
	Long-term health condition	13 (13.3)	13 (13.4)

	Other	14 (14.3)	14 (14.4)
	Prefer not to answer	2 (2.0)	2 (2.1)

Note. Multiple responses were permitted for variables: gender identity, ethnicity and sexual orientation. FTM = female to male, MTF = male to female.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SupplementaryMaterialPackage.docx